

# ***GL3000***

***AUDIO MIXING CONSOLE***

***ALLEN  
&  
HEATH***

## **USER GUIDE**

PUBLICATION **AP2366**

# LIMITED ONE YEAR WARRANTY

This product has been manufactured in the UK by ALLEN & HEATH and is warranted to be free from defects in materials or workmanship for a period of one year from the date of purchase by the original owner.

To ensure the high level of performance and reliability for which this equipment has been designed and manufactured please read this User Guide before use.

In the event of a failure notify and return the defective unit to ALLEN & HEATH or its authorised agent as soon as possible for repair under warranty subject to the following conditions:

## CONDITIONS OF WARRANTY:

1. The equipment has been installed and operated in accordance with the instructions in the User Guide.
2. The equipment has not been subject to misuse either intended or accidental, neglect, or alteration other than as described in the User Guide or Service Manual, or approved by ALLEN & HEATH.
3. Any necessary adjustment, alteration, or repair has been made by ALLEN & HEATH or its authorised agent.
4. The defective unit is to be returned carriage prepaid to ALLEN & HEATH or its authorised agent with proof of purchase.
5. Units to be returned should be packed to avoid transit damage.

These terms of warranty apply to UK sales. In other territories the terms may vary according to legal requirements.



This product complies with the European Directives for Electromagnetic Compatibility 89/336/EEC & 92/31/EEC.



## ALLEN & HEATH AGENT:



## U.K. FACTORY:

ALLEN & HEATH.  
Kernick Industrial Estate,  
Penryn.  
Cornwall. TR10 9LU.

## INTRODUCTION

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The **GL3000** continues ALLEN & HEATH's commitment to provide high quality audio mixing consoles engineered to meet the exacting requirements of today's audio business. It brings you the latest in high performance technology and offers the reassurance of over two decades of console manufacture and customer support.

This user guide presents a quick reference to the function, application and installation of the **GL3000**. For further information on the basic principles of audio system engineering please refer to one of the specialist publications available from bookshops and audio equipment dealers.

Whilst we believe the information in this guide to be reliable we do not assume responsibility for inaccuracies. We also reserve the right to make changes in the interest of further product development.

## SERVICE AND TECHNICAL SUPPORT

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Under normal conditions the **GL3000** does not require user maintenance or internal calibration. Any service work required should be carried out by qualified service personnel only.

We are able to offer further product support through our worldwide network of approved dealers and service agents. To help us provide the most efficient service please keep a record of the console serial number, and date and place of purchase to be quoted in any communication regarding this product.



### SAFETY WARNING !

**Mains electricity is dangerous and can kill.** Mains voltage is present within the power supply unit provided with the console. Do not remove the power unit cover with mains connected. The correct mains voltage setting is indicated on the rear of the power unit. Check your mains wiring and earthing before switching on.

#### DO NOT REMOVE THE MAINS EARTH CONNECTION!

**The console chassis is connected to mains earth to ensure your safety.** Audio 0V connects to the console chassis internally. Should problems be encountered with ground loops operate the audio ground lift switches on connected equipment accordingly or disconnect the cable screens at one end. Refer to the section on 'EARTHING' later in this User Guide.

## PRECAUTIONS.

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- **AC POWER:** Check the power unit for correct AC mains voltage setting before switching on. Allow adequate space around the unit for ventilation.
- **CONNECTIONS:** Use audio connectors and cables only for their intended purpose. Do not connect any source of AC or DC power to the console audio connectors. Do not connect the output of power amplifiers directly to the console.
- **CLEANING:** Avoid the use of chemicals, abrasives and solvents. The control panel is best cleaned with a soft brush and lint-free cloth. To remove stubborn marks (such as chinagraph pencil) isopropyl alcohol may be used.
- **LUBRICATION:** The faders, switches and potentiometers are lubricated for life. The use of electrical lubricants on these parts is not recommended.
- **DIRT, DUST, SMOKE and MOISTURE:** Prevent damage to the moving parts, such as faders and potentiometers, and cosmetics by avoiding drinks spillage, tobacco ash and smoke, and exposure to rain and condensation. Protect from excessive dirt, dust, heat and vibration.

## INSTALLING THE POWER SUPPLY UNIT

Refer to the **SAFETY WARNING** on the first page of this User Guide.

Power supply type **RPS9** is provided with the **GL3000** to convert AC mains voltage to the regulated positive and negative DC voltages required to power the console. It also supplies the +48V phantom power voltage for use with certain microphones.

The **RPS9** may be operated free standing or 19" rack mounted (2U height) up to 2 metres away from the console. As with any power supply unit it is recommended that it is positioned slightly away from the console or other signal processing equipment containing sensitive low level audio signals to avoid any possible hum pickup. It connects to the console by means of a 2.5 metre DC power cable fitted with a 5 pin locking XLR plug. Mains input to the **RPS9** is via a standard 3 pin IEC mains connector with integral AC mains fuse. A mains cable with moulded plug suitable for the local supply is provided.



**Check that the voltage indicated in the fuseholder window is the same as the mains supply in your area.**

|                                   |            |         |           |
|-----------------------------------|------------|---------|-----------|
| AC mains supply = 100 to 110 V.AC | <b>100</b> | T 3.15A | 20mm fuse |
| AC mains supply = 110 to 125 V.AC | <b>120</b> | T 3.15A | 20mm fuse |
| AC mains supply = 210 to 230 V.AC | <b>230</b> | T 1A    | 20mm fuse |
| AC mains supply = 235 to 260 V.AC | <b>240</b> | T 1A    | 20mm fuse |



**To avoid the risk of fire replace the fuse only with the correct type and value as specified on the unit.**



It is normal for the power unit to dissipate heat. **Ensure adequate ventilation around the unit.** Do not cover the unit or position it on soft furnishings during operation. Do not position other equipment known to generate significant amounts of heat below the unit. It is recommended that rack units containing high power amplifiers and other heat dissipating equipment are fitted with cooling fans.

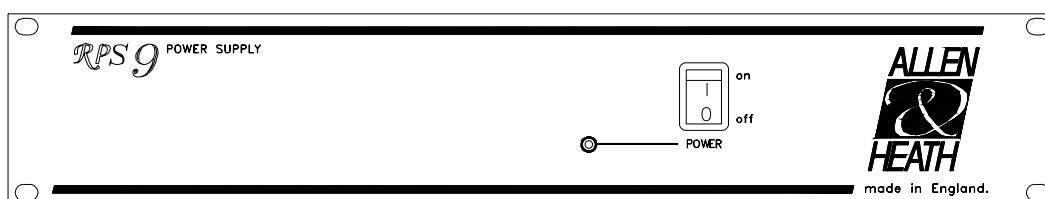


**Always switch the power unit off before connecting or disconnecting the console power cable.**



**This unit contains no user serviceable parts. Do not remove the cover.** Refer servicing to qualified service personnel only.

Note: The **RPS9** is fitted with a rear panel ground lift switch. This is for use when the unit powers certain other Allen & Heath equipment. This switch is not operative on the **GL3000** range. Refer to the section on 'EARTHING THE AUDIO SYSTEM'.



The **RPS9** power supply unit conforms to safety standard **BS EN 60065**

## EARTHING THE AUDIO SYSTEM

The console chassis is connected to mains earth via the DC power cable. Audio 0V is connected to the chassis and hence mains earth internally. In this way all signal returns and connector shields are connected to mains earth at the console.



**To ensure operator safety do not remove the earth connection from the power supply mains plug.**

For best performance it is important that the earth system is solid, clean and noise-free. To prevent mains born and external interference pickup from lighting equipment, motors and other mains powered equipment it is recommended that a separate 'clean' mains distribution outlet is used for the audio system.

All signal cables should have their screens connected to earth at the connector. If earth (ground) loop problems result in audible hum or buzz then disconnect the cable screen connection at one end, usually the destination end. This may be done within the cable plug or by operating the 'ground lift' switch if available on the connected equipment. Many DI boxes and power amplifiers include this facility.

## PLUGGING UP THE CABLES

Where possible use balanced connections to prevent noise and interference pickup especially on long microphone cable runs. Avoid running audio cables next to mains, computer or lighting cables, or near thyristor dimmer units, power supplies etc. The use of low impedance sources such as good quality microphones of 200 ohms or less significantly reduces interference pickup. Many problems can be avoided by taking time to check that all cables are correctly wired (in-phase) with professional quality cable and carefully soldered joints. The following wiring convention is used:

**XLR**

pin 1 = 0V earth shield  
pin 2 = hot (in phase signal)  
pin 3 = cold (out of phase signal)

**1/4" jack**

tip = hot / signal / left / send  
ring = cold / 0V / right / return  
sleeve = 0V earth shield

To connect an unbalanced source to a balanced console input, link the cold input (XLR pin 3 or jack ring) to 0V earth (pin 1 or jack sleeve) at the console. To connect a balanced console output to an unbalanced destination link the cold output to 0V earth at the console.



**Switch off channel +48V when the inputs are connected to non-phantom powered, line or unbalanced sources.**

## ADJUSTING THE LEVELS

For best performance it is important that the connected source signals are matched to the "normal operating level" of the console. Similarly the console outputs should be correctly matched to the operating levels of the connected amplifiers and destination equipment. If too high the signal peaks will be clipped resulting in a harsh distorted sound, and if too low the signal-to-noise ratio is reduced resulting in excessive background hiss.

For best results operate the console with the meters averaging '0' or just below and allowing the loudest passages and occasional peaks into the 'yellow'. Reduce the gain if the peak indicators flash (red). The **GL3000** produces a standard XLR output level of +4dBu for a meter reading of 0VU. It is advisable to adjust the power amplifier input gain or fit an attenuator pad if normal console operation results in an output level too high for the connected amplifier. Normal operation should result in fader levels around the '0' mark.

The **GL3000** has an advanced PFL (pre-fade listen) / AFL (after-fader listen) and channel metering system to let you listen to and check the level of signals at different points in the signal path without affecting the main outputs. Use the channel **PFL** switches to set up the input **GAIN** controls to read an average '0' (yellow LED). Signal activity is always shown on the channel meters regardless of fader position. The green 'SIG' LED lights at -20dBu to indicate signal presence, the green '0' LED indicates normal level, and the red 'PEAK' LED warns of potential overload 5dB before clipping.

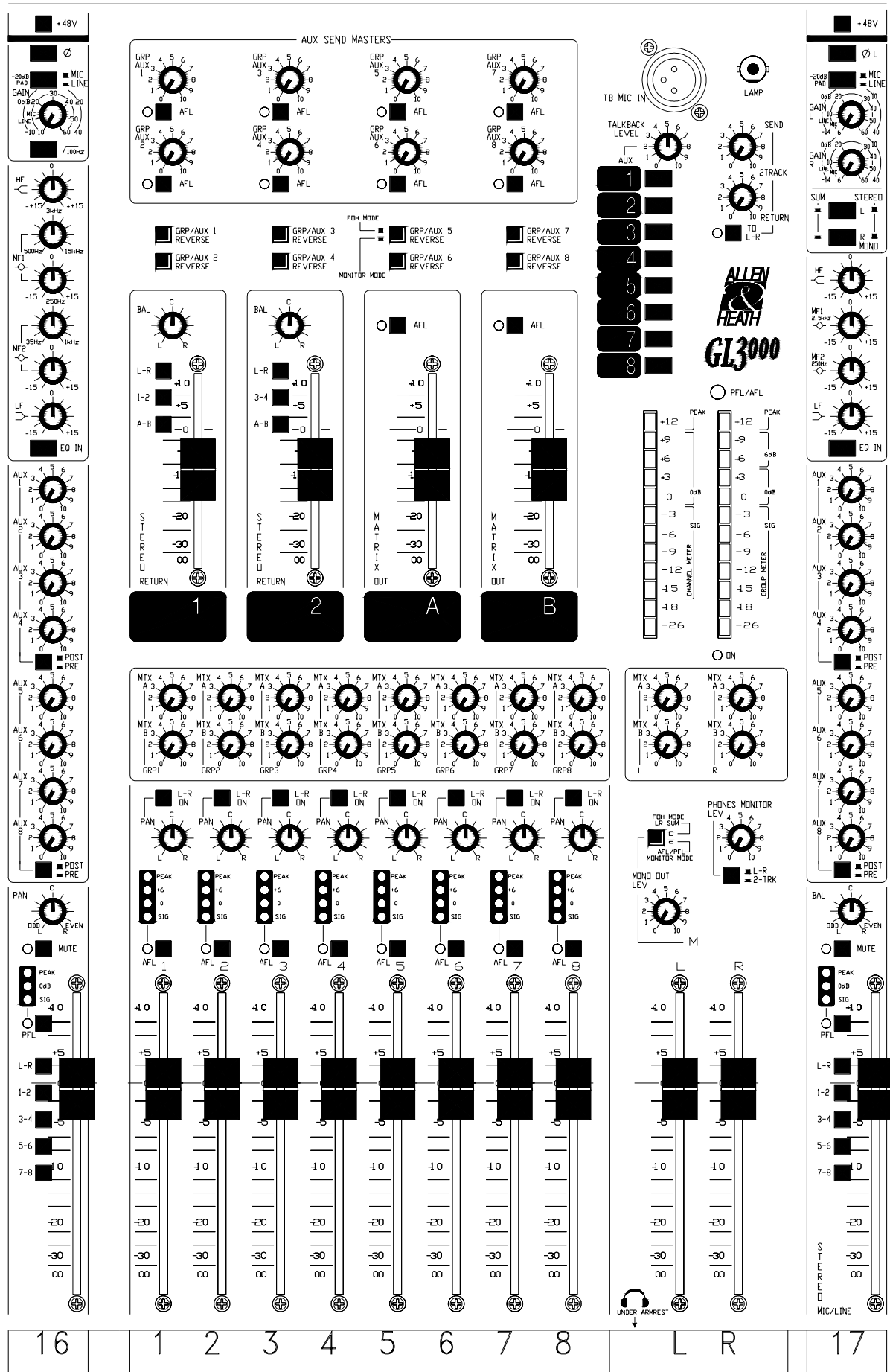
# GL3000

The ALLEN & HEATH **GL3000** represents a breakthrough in price versus performance and functionality. It offers the professional user a new level of versatility to quickly adapt to the exacting demands of live sound engineering today. The **GL3000** is developed from the successful **GL3** console which first introduced the innovative 'mode switching' that quickly converts the console from Front-of-House to On-stage Monitor operation. Apart from continuing the development of this unique feature the **GL3000** packs in more features and performance at the same price point of the mixer it supercedes. We now offer you 8 subgroups, 8 independent aux sends, 2 matrix outputs, stereo mic/line channels and lots more ...

## FEATURES

- ✓ Easy to use intuitive layout.
- ✓ 16, 24, 32 and 40 channel models.
- ✓ Separate safety approved power supply unit.
- ✓ Mono and stereo channel bolt-on expanders available to extend to a maximum 40 channels.
- ✓ **SYS-LINK** buss expander option.
- ✓ VU meterpod option for 24,32 and 40 models.
- ✓ 4 stereo mic/line channels as standard on 24, 32, 40 models with XLR inputs and inserts.
- ✓ L, R outputs on balanced XLR with inserts.
- ✓ Mono sum output on balanced XLR, mode switched to be 'listen wedge' monitor.
- ✓ 8 subgroups, with 4 available outputs on balanced XLR with inserts.
- ✓ 2 matrix outputs on faders fed from L, R, 8 subgroups and stereo returns.
- ✓ 8 aux sends, 4 on jack, 4 on balanced XLR outputs with inserts.
- ✓ Mode switching to convert console to on-stage monitor status with 8 mono and 1 stereo sends.
- ✓ 2 stereo returns on faders with routing.
- ✓ 2-track record and replay with level controls.
- ✓ Individual talkback to all aux sends.
- ✓ Extensive monitoring and metering facilities
- ✓ Gooseneck lamp connector.
- ✓ Advanced channel features including +48V, phase switch, lo-cut filter, meter and insert.
- ✓ 4 band 2 sweep EQ with wide ranging frequency sweep and +/-15dB boost/cut.
- ✓ Pre-post aux switching with additional internal link options.
- ✓ Pan and 'LR on' switch on each subgroup.
- ✓ High performance circuitry used for low noise and sonic purity.
- ✓ High quality, proven reliable parts used throughout.
- ✓ Rear mounted connectors, comfortable soft armrest, wide write-on strips.
- ✓ Rugged metal beam construction for on-the-road rigidity, easily flightcased and transported.
- ✓ Removeable steel base for easy access to individual circuit assemblies.

## FRONT PANEL LAYOUT



# THE RANGE

## 16, 24, 32 and 40 channel models.

- GL3000-816** 16 mono, 8 groups, 8 aux, 2 stereo returns, 2 matrix, L,R, Mono sum  
**GL3000-824S** 20 mono, 4 stereo, 8 groups, 8 aux, 2 stereo returns, 2 matrix, L,R, Mono sum  
**GL3000-832S** 28 mono, 4 stereo, 8 groups, 8 aux, 2 stereo returns, 2 matrix, L,R, Mono sum  
**GL3000-840S** 36 mono, 4 stereo, 8 groups, 8 aux, 2 stereo returns, 2 matrix, L,R, Mono sum

With separate **RPS9** rack mount power supply unit.

Can work with **RPSD** dual supply combiner/monitor.

## 8 channel bolt-on expander to extend any size console to a maximum 40 channels.

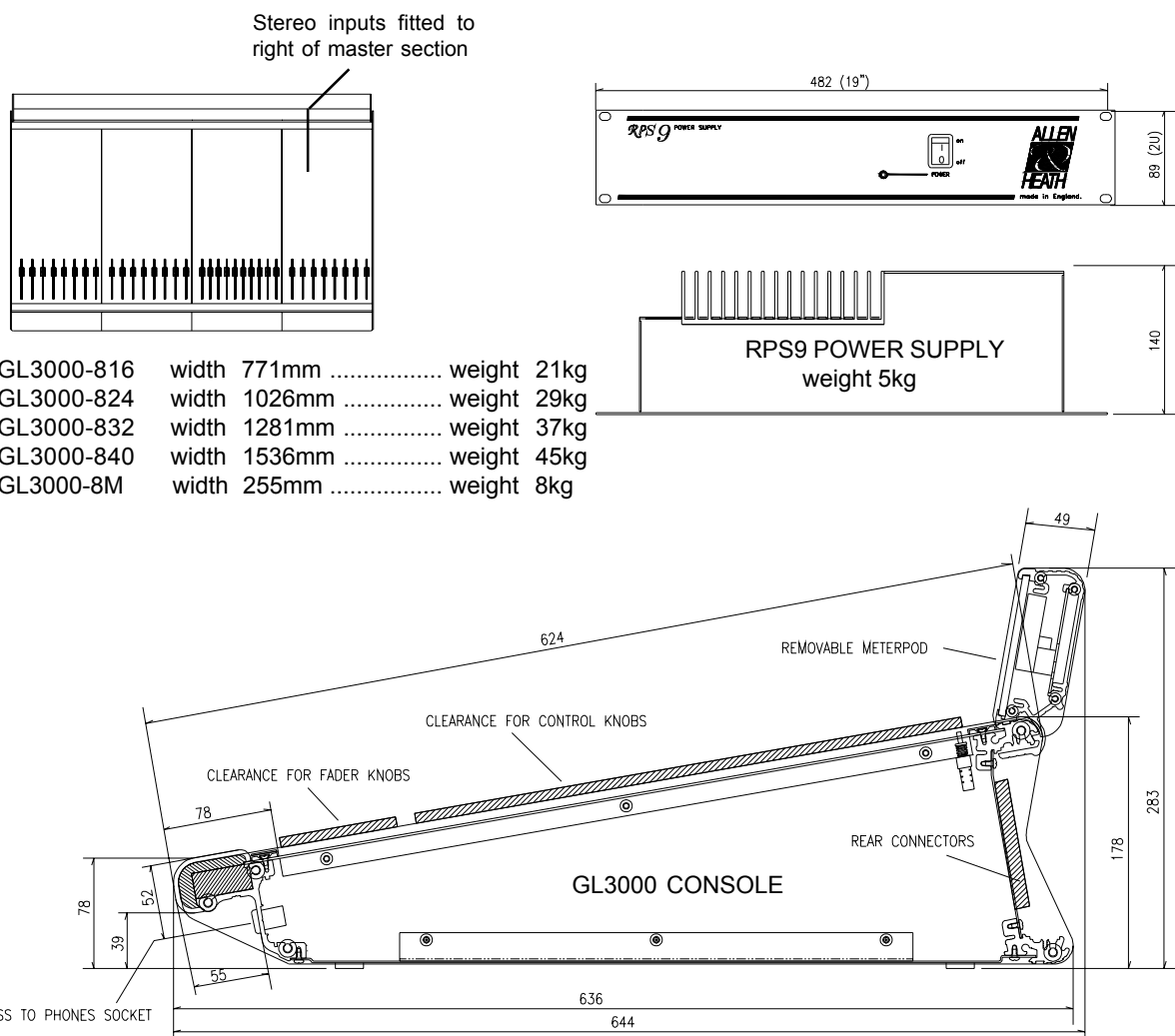
- GL3000-8M** 8 mono inputs  
**GL3000-4SM** 4 mono, 4 stereo mic/line inputs

Optional **VU meterpod** for all lighting conditions. Moving coil VU ballistics.

- GL3000-M24** 24way VU meterpod Monitors groups (aux) 1-8, L, R, PFL  
**GL3000-M32** 32way VU meterpod  
**GL3000-M40** 40way VU meterpod

Optional **SYS-LINK** buss expander system

- GL3000-SL1** One kit required per console. User to source interconnecting cables.



# SPECIFICATION

0 dBu = 0.775 Volts RMS  
0 dBV = 1 Volt RMS

INTERNAL OPERATING LEVEL: -2 dBu

INTERNAL HEADROOM: ..... +21dB channels, +23dB mix to output.

MAX OUTPUTS: ..... balanced +27dBu 600 ohm max load  
unbalanced +21dBu 2kohm max load

METERS: ..... L, R ..... peak reading 12 segment LED  
Groups 1-8 ..... peak reading 4 segment LED  
Channels ..... peak reading 3 segment LED

PEAK LEDs: ..... Turn on 5dB before clipping

OPTIONAL METER POD: ..... Illuminated VU meters  
Groups 1-8, L, R, PFL/AFL  
PFL/AFL active indicator

POWER SUPPLY: ..... RPS9 2U x 19" rack mount  
AC Mains input: ..... range 100V to 240V.AC 50/60Hz

Set with 4 position fuse insert

Power consumption ..... 200W max

Mains Fuse rating: ..... 100-120V.AC use T3.15A 20mm  
220-240V.AC use T1.0A 20mm

DC output: ..... +/-16V 2.5A max, +48V 100mA max

FREQUENCY RESPONSE: 20Hz to 30kHz +0/-1dB

DISTORTION: ... THD + Noise at +14dBu 1kHz

Mic in to LR out at +40dB gain ..... 0.006%

Line in to LR out at 0dB gain ..... 0.006%

CROSSTALK: . Referred to driven channel at 1kHz

Adjacent channel ..... <-100dB

Fader shutoff ..... <-90dB

Mute shutoff ..... <-80dB

Panpot shutoff ..... <-72dB

NOISE: ..... Measured RMS 22Hz to 22kHz bandwidth

Mic input EIN referred to 150 ohm source ..... <-128dB

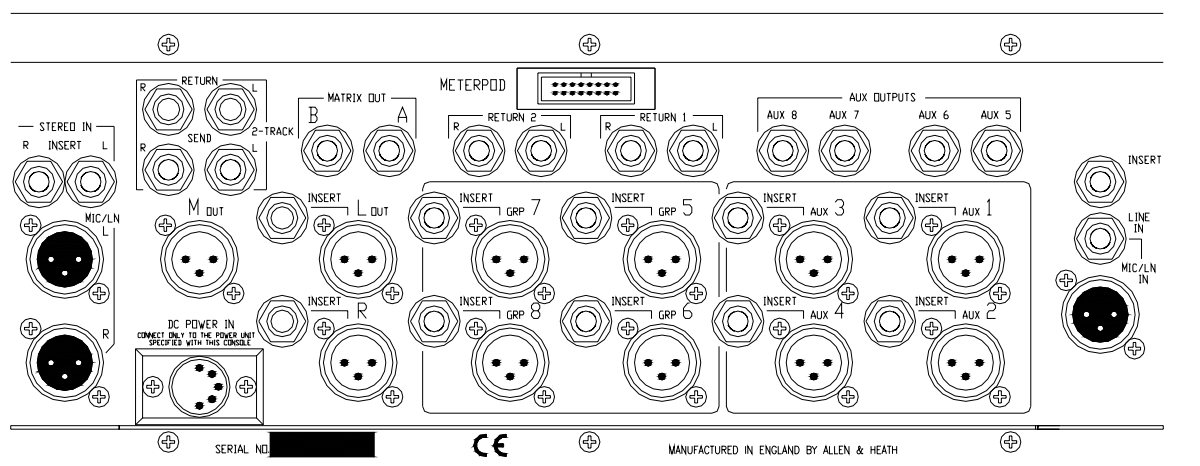
Line input pre-amp at 0dB gain ..... <-93dBu

LR output residual noise ..... <-98dBu 102dB S/N

LR faders '0' no channels routed ..... <-90dBu 94dB S/N

LR mix noise with 16 channels routed ..... <-86dBu 90dB S/N

Group mix noise with 16 channels routed ..... <-87dBu 91dB S/N



## CONNECTIONS

### INPUTS:

MICIN ..... XLR ..... pin 2 hot, 3 cold, balanced ..... 2 kohms ..... variable -60 to -10dBu  
LINEIN ..... XLR ..... pin 2 hot, 3 cold, balanced ..... 10 kohms ..... variable -40 to +10 dBu  
or 1/4" JACK ..... tip hot, ring cold, balanced ..... 10 kohms ..... variable -40 to +10 dBu  
STEREO RETURN ..... 1/4" JACK ..... tip sig, ring gnd, unbalanced ..... >6 kohms ..... -10dBV min  
2-TRACK RETURN ..... 1/4" JACK ..... tip sig, ring gnd, unbalanced ..... >16 kohms ..... variable -10 dBV min  
INSERT RETURN ..... 1/4" JACK ..... tip send, ring ret, unbalanced .. >6 kohms ..... 0dBu (chan), -2dBu (out)

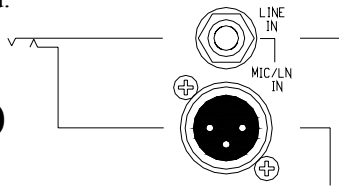
### OUTPUTS:

L, R, MONO OUT ..... XLR ..... pin 2 hot, 3 cold, balanced ..... <75 ohms ..... +4 dBu +27 dBu max  
GROUP OUT 5-8 ..... XLR ..... pin 2 hot, 3 cold, balanced ..... <75 ohms ..... +4 dBu +27 dBu max  
AUX OUT 1-4 ..... XLR ..... pin 2 hot, 3 cold, balanced ..... <75 ohms ..... +4 dBu +27 dBu max  
AUX OUT 5-8 ..... 1/4" JACK ..... tip hot, ring cold, ground comp <75 ohms ..... variable +21 dBu max  
MATRIX OUT A-B ..... 1/4" JACK ..... tip hot, ring cold, ground comp <75 ohms ..... -2 dBu +21 dBu max  
(balance option) ... 1/4" JACK ..... tip hot, ring cold, balanced ..... <75 ohms ..... +4 dBu +27 dBu max  
2-TRACK SEND ..... 1/4" JACK ..... tip hot, ring cold, ground comp <75 ohms ..... variable +21 dBu max  
INSERT SEND ..... 1/4" JACK ..... tip send, ring ret, unbalanced .. <75 ohms ..... 0dBu (chan), -2dBu (out)  
PHONES OUT ..... 1/4" JACK ..... tip left, ring right ..... for stereo headphones 150 to 600 ohms

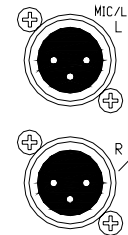
# INPUT CHANNELS

For line sources on XLR simply plug into the XLR with the jack socket unplugged.

## MONO



Plug in a microphone or line level source. Use balanced cables where possible to prevent interference pickup on long cable runs. Unbalanced sources may be connected by linking signal cold to ground (XLR pin 3 to pin 1, jack ring to sleeve) at the connector.

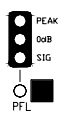


## STEREO

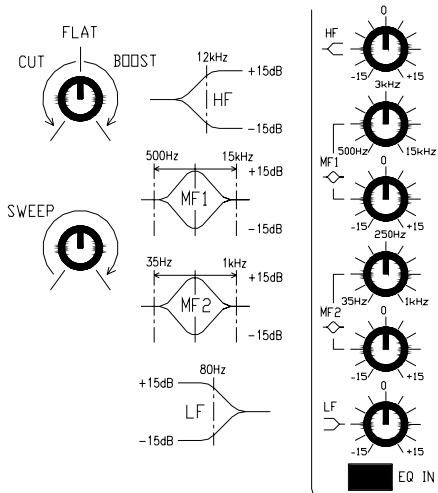
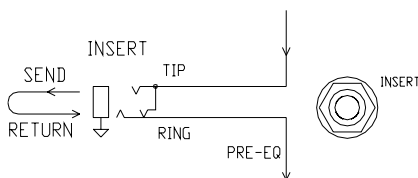
**Switch off channel +48V when the inputs are connected to non-phantom powered, line or unbalanced sources.**

For balanced microphones which require phantom power select **+48V**. If required this switch may be disabled by an internal link.

Use the **PFL** system to listen to the signal and fine tune the gain setting.



**INSERT** lets you plug in external effects and signal processing equipment into the signal path. Operate at around 0dBu line level.



The 2 mid frequency bands may be swept across a wide frequency range to tune into the exact frequency required, most useful for getting the best out of microphones or when tuning out troublesome feedback. The mid bands are overlapping to provide additional cut or boost when required, or provide a tailored response to suit any application.

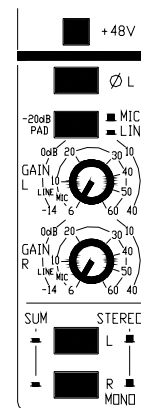
**φ PHASE** reverses the phase of the input source to correct the phase differences often encountered in microphone placement, or due to incorrectly wired cables (pin 3 hot instead of pin 2). May also be used to minimise acoustic feedback between closely positioned loudspeakers and mics in live sound mixing. The stereo **φL** reverses the left input phase only to correct for differences between left and right signals, or for MS microphone techniques.

**MIC/LINE** selects line sensitivity on the jack input when pressed. Or becomes a 20dB pad for the XLR input when no jack is plugged in.

**GAIN** matches the level of the input source to the normal operating level of the console. Adjust this to read an average '0dB' on the channel meter (yellow LED). Use the **PFL** system to listen to the signal and fine tune the gain.

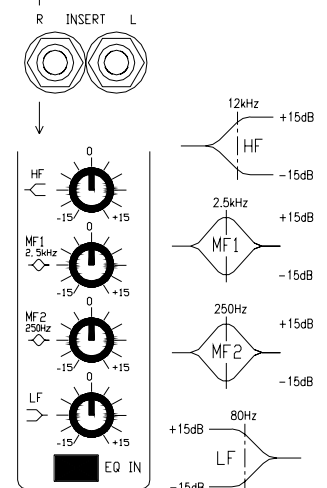
**100Hz lo-cut filter** removes low frequency noise such as microphone pops, stage noise and transport rumble before the pre-amp stage. The lo-cut filter is independent of the equaliser.

The **4-band EQ** lets you adjust the tonal quality of the sound in 4 separate bands. HF (treble) and LF (bass) are shelving while the 2 mid bands are peak/dip with a Q of 1.6. This is optimum for both corrective and creative equalisation. The controls are centre detented for centre flat response. Press **EQ IN** to switch the EQ into the signal path.



Separate **GAIN** controls for L and R inputs let you adjust the balance between the sources, or treat each as a separate source.

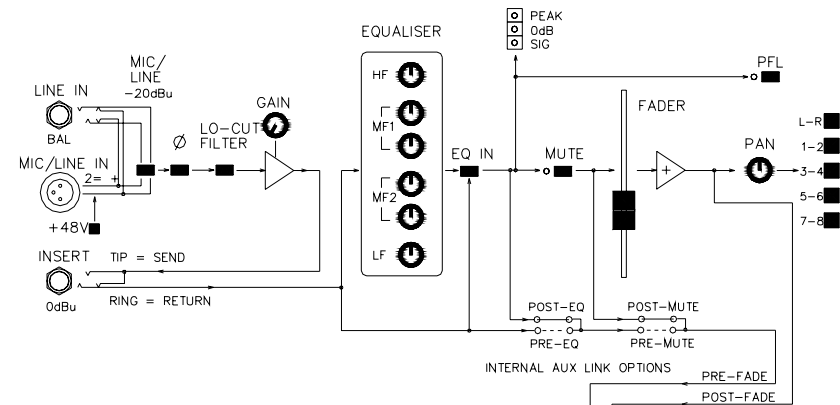
Both **L** and **R** up gives you a true stereo channel. Press both to mono the source. Press just one to select one side only as a mono source.



The 4-band stereo EQ puts the 2 mid frequencies at 250Hz and 2.5kHz. This provides optimum control over boomy or boxy sounds (250Hz), and to add bite or reduce harshness to keyboards, vocals etc. (2.5kHz). The stereo channels are well suited to stereo miking, dual mic mixing, or returning keyboards and effects processors to the mix and monitors.

# 8 AUX SENDS

**8 AUX SENDS** provide ample feeds for foldback monitors and effects. These are in two groups of four each with a **POST/PRE** switch to source the sends either pre-fader or post-fader.



**AUX 1-4** feed balanced XLR outputs capable of driving long cable runs and include **INSERT** points. These are normally used to provide **MONITOR SENDS** to the performers and stage crew, although they can of course be used for additional effects. Plug a graphic EQ into the insert to 'ring out the monitor' (tune) to the stage acoustics to minimise feedback. The effect of the EQ can be listened to using the aux master **AFL** system. Monitor sends are usually set pre-fade, although some sources such as radio mics are often set post-fade to avoid 'dressing room' talk spill. Note that the stereo channel aux sends are the mono sum of left and right.

**AUX 5-8** feed jack outputs and are normally used to provide **EFFECTS SENDS** to external devices such as reverb and delay effects units. Effects sends are set post-fade so that the amount of effect (wet signal) is always relative to the position of the fader (dry signal). Adjust the amount of effect required for each channel using its **AUX** control. The effect is returned to the mix through another channel, usually the stereo return described later in this guide.

**POST-FADE** sends are always post-EQ, post-mute. **PRE-FADE** sends are set post-EQ, post-mute as standard, but may be internally reset to be pre-EQ, pre-mute or post-EQ, pre-mute. Each aux may be internally set to pre or post-fade permanently rather than follow the panel switch.

Note that **AUX 5-8** feed XLR outputs with inserts as does 1-4 when **GRP/AUX REVERSE** is pressed in the master section.

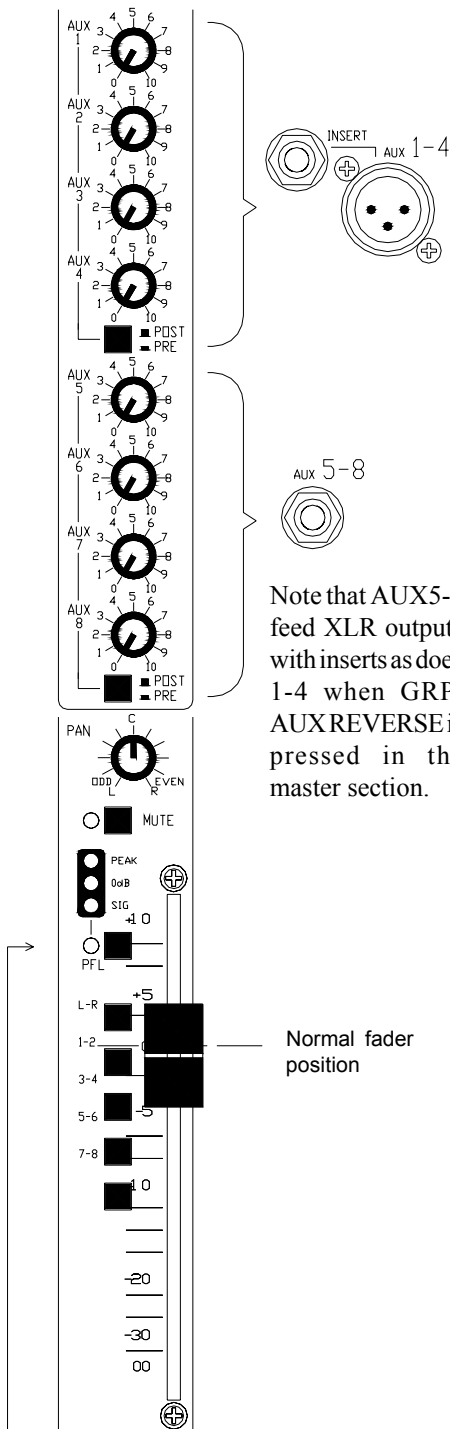
**MUTE** switches the signal off when pressed regardless of fader position. Muted channels are indicated by red LEDs. The meter continues to indicate pre-fader channel activity.

**PAN** positions the channel signal between L (odd) and R (even) of the outputs selected on the L-R and group 1-8 **ROUTING** switches. This lets you position the sounds within a stereo image. In this way subgroups may be set up in mono or stereo to feed the main L-R mix.

A 100mm long throw **FADER** provides +10dB boost above the normal '0' operating level.

A 3 LED **CHANNEL METER** system shows signal activity at all times. The green **SIG** LED indicates signals greater than -20dBu, yellow '0' represents normal operating level, and red **PEAK** warns of potential overload 5dB before clipping. Set the channel so that the meter averages '0'. Back the gain off if the red peak LED flashes.

Pressing **PFL** automatically interrupts the headphone monitor signal to let you listen to the channel pre-fader signal without interrupting the main console outputs. The signal level is shown on the LR monitor bargraph meters, and on the PFL meter in the optional meterpod if fitted. In this way each sound can be correctly lined up and checked at any time.



# AUX SENDS

# EFFECTS

# GROUPS

**AUX 1-4** balanced outputs to feed foldback monitors. **INSERT** graphic EQ to tune out acoustic resonances to minimise feedback. **AFL** lets you check the output signal after the insert and master level control.

**AUX 5-8** jack outputs to send to selected signals to external effects devices. A nominal control setting of '7' allows +10dB boost above normal line level.

**GROUP 5-8** are available on balanced XLR outputs to drive long cable runs, and with **INSERTS** to insert signal processing devices such as compressor/limiters into the signal path. Use these outputs as additional speaker feeds or for recording. In **'MONITOR MODE'** these become **AUX 5-8** outputs to provide a total of 8 dedicated stage monitor sends on XLR and with inserts.

All the XLR outputs operate at a nominal high level +4dBu. Ensure correct matching to external equipment.

# MODE SWITCHES

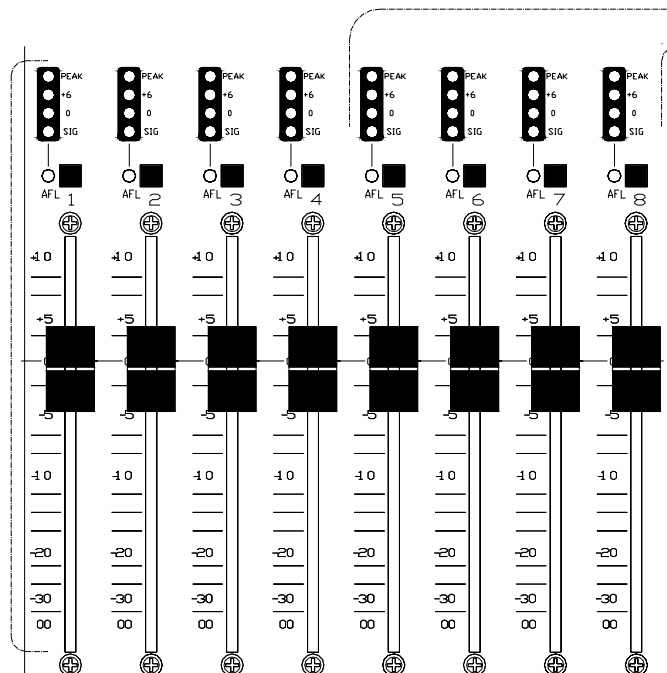
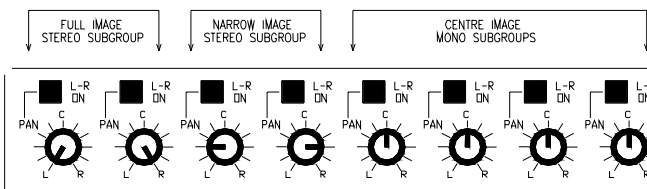
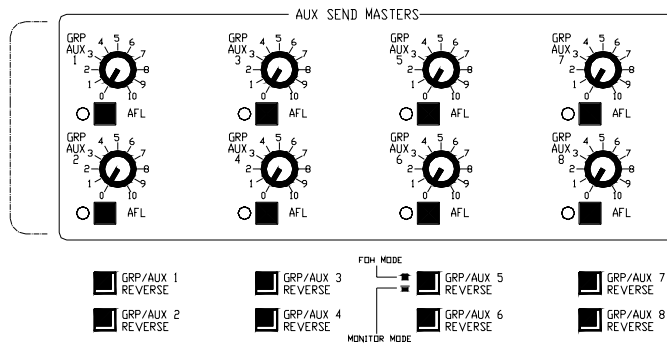
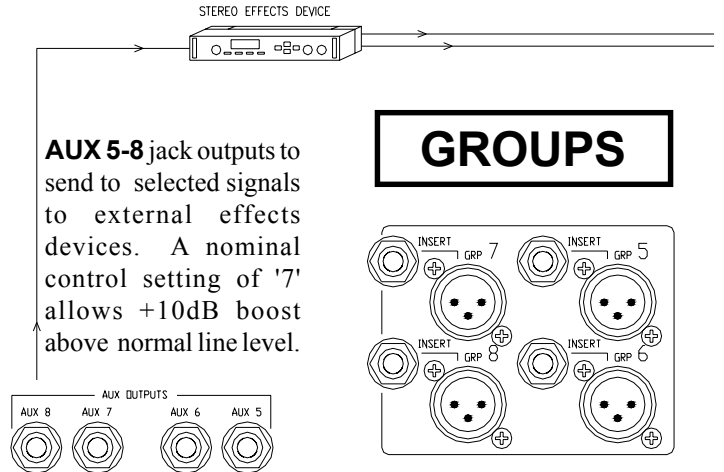
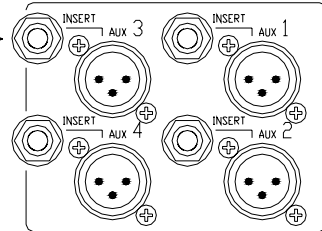
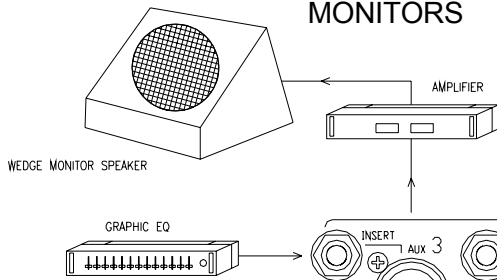
Decide your required console configuration and set these recessed switches using a pen tip or similar.

Press **REVERSE** to swap the group fader section with the aux master section. This represents **'MONITOR MODE'** where the aux mix is controlled on the fader with output **METER**, **AFL**, balanced XLR and **INSERT** for full control of the monitor mix. **AFL** lets you listen to and check the effect of the inserted graphic EQ or similar processing device.

In this mode the group mix is available on the aux master controls to feed the jack outputs, as well as the subgroup section.

Mix and match this fader section as you require. For example you could have 2 as monitor sends, 4 as subgroups, and 2 as additional outputs.

## MONITORS



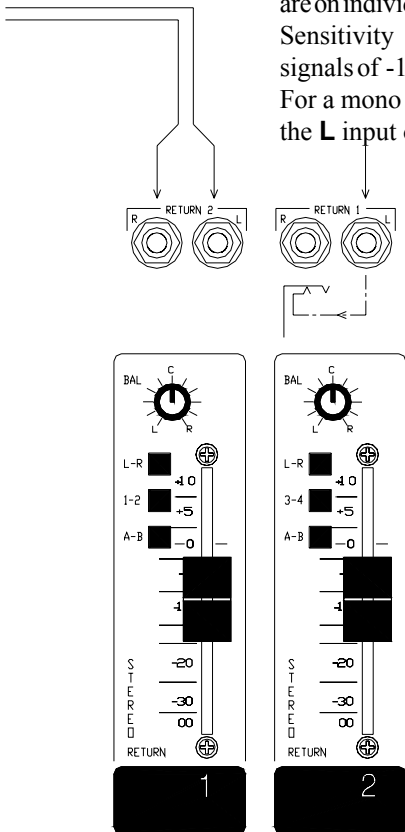
# SUBGROUPING

Using subgroups lets you group similar sounds together under control of a single fader (mono subgroup), or panned pair of faders (stereo subgroup). For example, the mics on a drum kit (kick, snare, overheads, toms), backing vocals, stage mics, orchestral wind section etc.

Select **L-R ON** to route a group to L-R as a subgroup. Position the signal within the stereo image using **PAN**. This illustration shows sub 1-2 as a stereo pair, and sub 3-4 panned off centre to slightly close the stereo image, useful when the speaker stacks are widely spaced and the front rows of the audience may be confused by a full stereo image. The subgrouping is always fed from the group mix regardless of **GRP/AUX REVERSE**.

## STEREO RETURNS

The **L/Mono** and **R** inputs are on individual jack sockets. Sensitivity is for line level signals of -10dBV and more. For a mono source plug into the **L** input only.



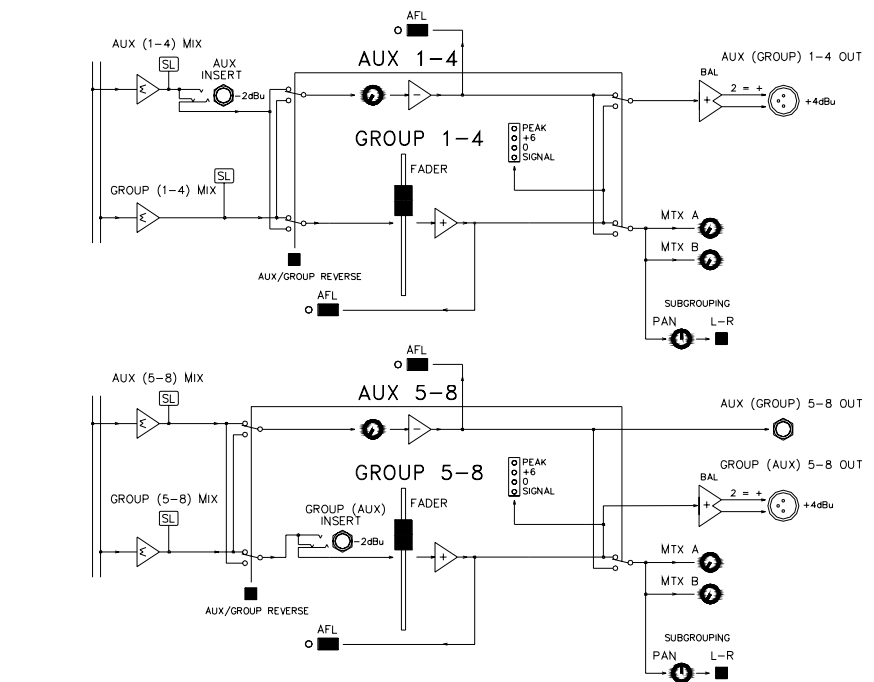
2 Stereo return inputs are provided to return the effects ('wet') signal, usually from a stereo device, to the mix. These are normally routed to the main **L-R** mix but may be returned to the corresponding pairs of subgroups for group effects (**1-2** or **3-4**).

These inputs may also be used as additional line inputs, or as external inputs to the matrix mix by selecting **A-B**. The **BAL** control adjusts the balance between left and right signals, or can be used as a pan control to route the signal to one side only by rotating fully. A smooth travel 60mm fader provides precise control of the level.

## L,R,M OUTPUTS

The main **L** and **R** outputs are individually controlled on two 100mm long throw faders. The outputs are balanced XLR to drive long cable runs. **INSERT** points are provided so that signal processors such as compressors or limiters may be patched into the signal path.

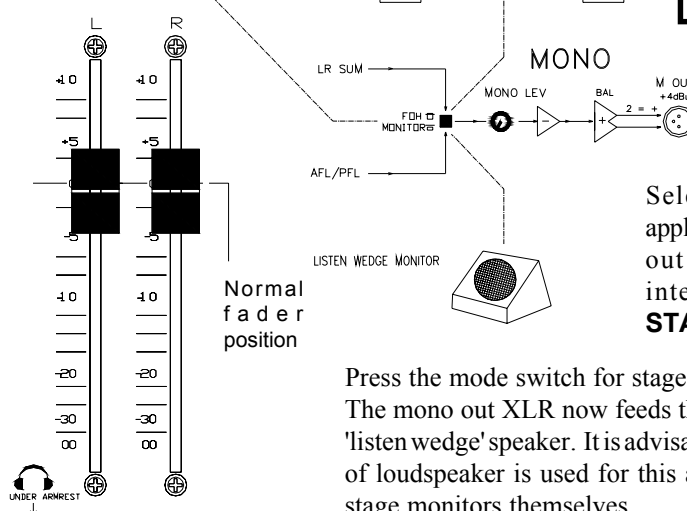
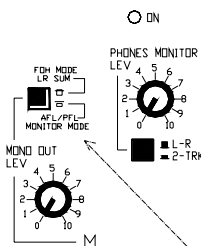
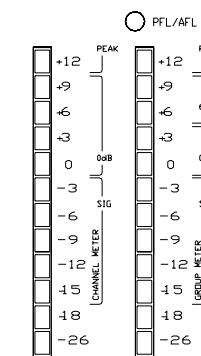
Left and right signals are summed together to the balanced XLR **MONO** output which may be used to feed a centre fill speaker system, provide a mono broadcast or recording feed, or work a mono PA with capability for stereo recording.



## PHONES MONITOR

Plug in stereo headphones (150 to 600 ohms recommended) under the armrest. Adjust the **LEV** control for comfortable listening level. The phones and 12 segment bargraph meters normally monitor the post-fade L-R mix. Press **2-TRK** to monitor the return from a stereo recorder if connected.

Pressing **AFL** anywhere on the console automatically overrides the monitor with the selected AFL signal. Pressing **PFL** overrides both the monitor source and any selected **AFL**. This feature lets you listen to an **AFL** source, group for example, and check channel signals simply by pressing and releasing the required **PFL** buttons. **PFL** or **AFL** selected is indicated by means of a large red LED above the meters.

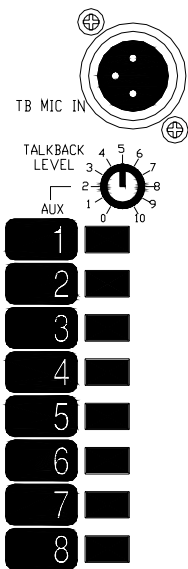


## MONITOR MODE

Select your required application: LR sum mono out **FOH**, or **AFL** interrupted by **PFL**, **STAGE MONITOR**.

Press the mode switch for stage monitor application. The mono out XLR now feeds the monitor engineers 'listen wedge' speaker. It is advisable that the same type of loudspeaker is used for this as those used for the stage monitors themselves.

## TALKBACK

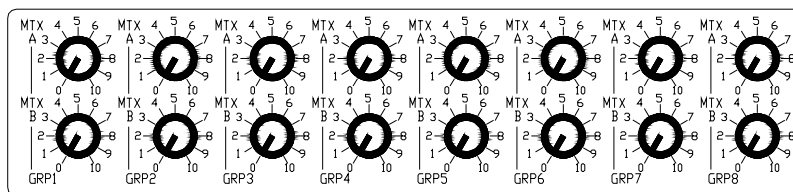
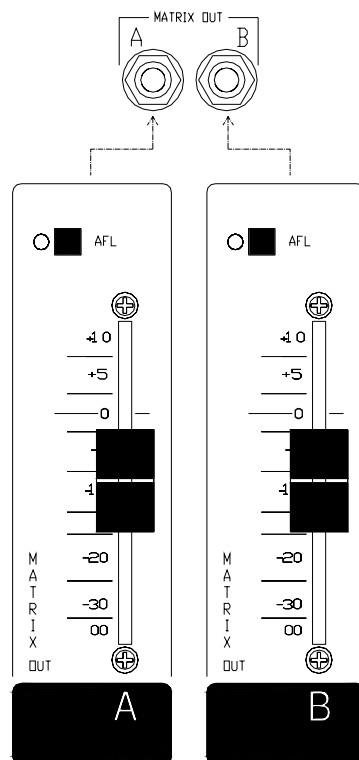


Balanced XLR input for a gooseneck (or cable) microphone for the operator to talk to the aux sends (foldback monitors). **+48V** may be enabled by means of an internal link for microphones which require phantom power.

Talk to the required aux mix by pressing and holding the momentary talk switch. Talk to several at the same time by holding down a combination of switches.

The ability to talk to individual auxes is important when using the console for stage monitoring and cueing the performers.

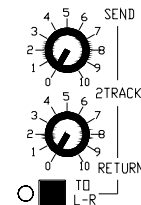
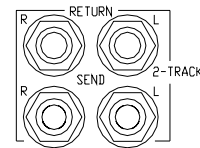
## MATRIX



Two matrix outputs **A** and **B** are provided. These are additional outputs on jack (balance option available) controlled through 60mm smooth travel **FADERS**, and with **AFL** monitoring to check the post fader signal. The matrix mix is created from the groups 1 to 8, L and R by adjusting the **MTX** level controls. These signals are fed post their respective faders. Note that in '**MONITOR MODE**' (**REVERSE** selected) the matrix is still fed from the groups (now routed via the aux masters). External inputs to the matrix are available from the adjacent stereo returns.

The matrix outputs satisfy a host of applications. Traditionally the matrix has been used to feed additional speaker systems such as auditorium balcony speakers. These are fed through delay units to compensate for acoustic delay through the distance from the main speakers. Here the balance of the mix may be slightly different from the main speakers, for example vocal light to keep the vocals nearer the stage. Adjusting the balance of the groups to the matrix achieves this. Another example is live sound recording where the PA mix may be necessarily lacking in bass due to the acoustic output of the orchestra or 'backline'. Compensate for this by recording from the matrix with the group feeds adjusted for an even recording balance.

## 2-TRACK



## LAMP



Plug in a 12V gooseneck lamp to provide illumination of the control panel.

This should be a BNC connector type.

Individual jack sockets are provided for left and right inputs (returns) from and outputs (sends) to a stereo recorder such as a DAT or cassette machine.

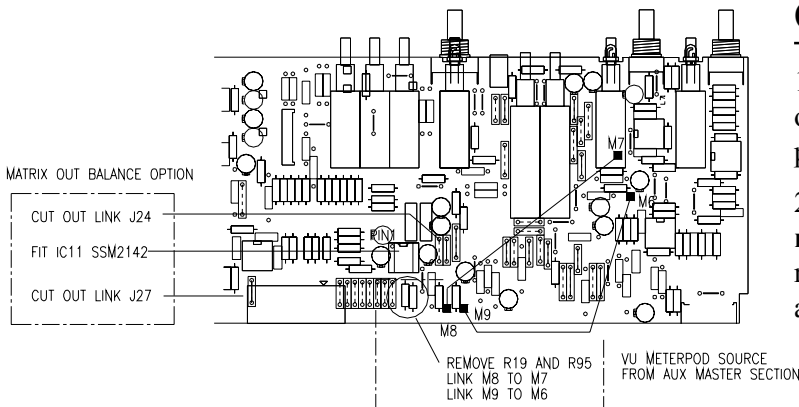
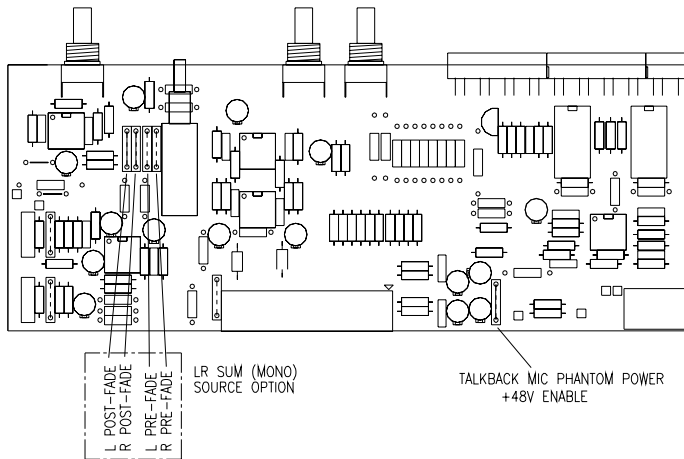
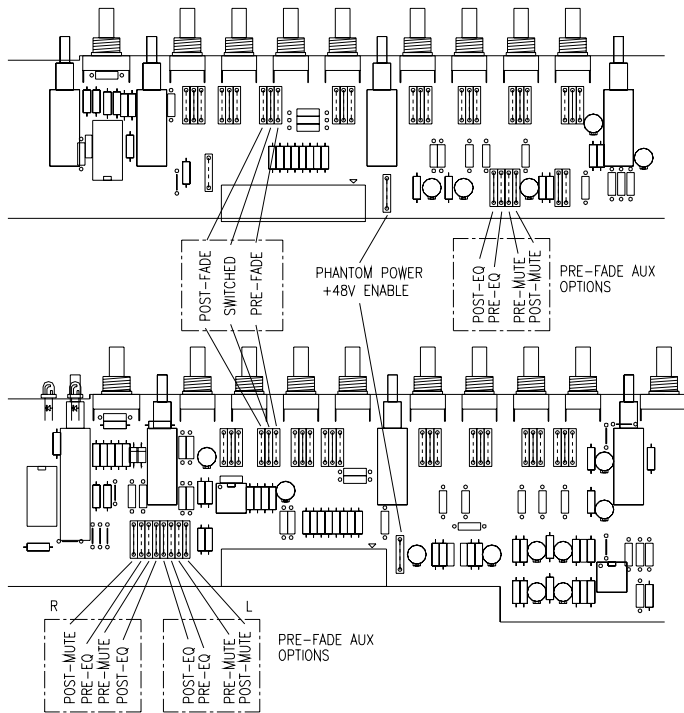
Alternatively the **RETURN** may be used for stereo intermission replay from a CD or similar to the main mix by pressing **TOL-R**. An LED warns that replay is on.

The **SEND** may be used for recording the performance in stereo, to feed alternative speakers, drive an induction loop hearing aid system, feed a stereo broadcast etc. The send is connected post L-R faders as standard.

Separate send and return level controls adjust the signal to the required line level and sensitivity. The console can work with both high (+4dBu) and low (-10dBV) level equipment.

# INTERNAL LINK OPTIONS

The console is set to satisfy most applications that should be encountered. However, the following internal link options are offered to provide alternative settings for those applications that may require them. These options involve resoldering of circuit board links and should only be carried out by competent technical personnel. Further information is available in the **GL3000 SERVICE MANUAL** and from your agent.



## MONO INPUT

1. Reconfigure each aux as required to be **permanently pre-fade or post-fade** rather than switched by the front panel **PRE/POST** switch.
2. Reconfigure the pre-fade sends to be **post-EQ / pre-mute**, or **pre-EQ / post-mute**, instead of the standard post-EQ / post-mute.
3. **Disable +48V** phantom power regardless of panel switch position - remove link.

## STEREO INPUT

1. Reconfigure each aux as required to be **permanently pre-fade or post-fade** rather than switched by the front panel **PRE/POST** switch.
2. Reconfigure the pre-fade sends to be **post-EQ / pre-mute**, or **pre-EQ / post-mute**, instead of the standard post-EQ / post-mute.
3. **Disable +48V** phantom power regardless of panel switch position - remove link.

## LEFT

1. Reconfigure the **LR sum source** (mono) from post LR faders to pre faders.
2. **Enable +48V** phantom power to talkback mic input - fit link.

## GROUP

1. Fit **Matrix out balance option** for jack output tip = hot, ring = cold. Remove two links and plug in balance driver IC.
2. Reconfigure the **feed to the optional VU meterpod** to follow the aux master rotary control rather than the group fader - remove two resistors and link two pairs of pads with a length of wire.

**ALLEN & HEATH**  
**GL3000** BLOCK DIAGRAM

